

Patent claims

1. Process for the removal of hydrogen sulfide and other sour gas components from industrial gases under pressure by means of a physical scrubbing agent and for the recovery of sulfur from hydrogen sulfide using a Claus plant,
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characterized in that:
- the hydrogen sulfide and the other sour gas components are absorptively dissolved in a physically acting scrubbing agent,
 - the physical scrubbing agent undergoes a multi-step regeneration (6),
 - 10 • the multi-step regeneration unit is equipped with at least one device each for CO enrichment (7), H₂S enrichment (8), CO₂ stripping (9) and thermal regeneration (10),
 - whereby the various regeneration steps operate at pressure levels that differ from each other and are lower than that of the absorption unit,
 - 15 • a Claus gas rich in hydrogen sulfide is withdrawn from one of the regeneration steps and fed to a Claus plant (14) which produces sulfur (15),
 - the tail gas leaving the Claus plant undergoes hydration and is compressed to a pressure that corresponds to one of the regeneration
 - 20 stages, and
 - the compressed tail gas is introduced into the device that is used for the CO enrichment (7).
2. Process according to Claim 1, **characterized in that** the device for CO
25 enrichment (7) is realized in the form of a flash column.
3. Process according to either of claims 1 or 2, **characterized in that** a process implemented as physical absorption is based on the Rectisol, Selexol or Morphysorb process.